

CLAIMS

That which is claimed is:

1. An expandable stent and stent delivery system comprising:

a delivery system including an elongated core member having a distal portion, a proximal
5 cylindrical member disposed about the distal portion of said elongated core member, and a distal
cylindrical member disposed about the distal portion of said elongated core member and
generally positioned distally from said proximal cylindrical member and spaced apart from said
proximal cylindrical member to define a gap having a longitudinal length;

an expandable stent comprising a small diameter skeletal tubular member having a thin
10 wall, said wall of said tubular member is cut to define a plurality of cells which are formed by a
plurality of interconnected strut members, a first one of said plurality of strut members being
formed with a threaded portion on said first strut member, a coil formed of radiopaque material
being wound onto said threaded portion of said first strut member to thereby define an anchor
member, said anchor member having a longitudinal length no greater than the longitudinal length
15 of said gap, and said expandable stent being mounted on at least one cylindrical member and
positioned such that said anchor member is disposed within said gap; and,

a deployment catheter having a lumen extending therethrough and disposed about said
elongated core member such that said deployment catheter compresses said expandable stent
about at least one cylindrical member causing said anchor member to be retained in said gap and
20 thereby causing said expandable stent to be interlocked onto said elongated core member.

2. An expandable stent and stent delivery system as defined in Claim 1, in which a second
one of said plurality of strut members is formed to create a threaded portion and a coil formed of

radiopaque material is wound onto said threaded portion of said second strut member to thereby define a second anchor member.

3. An expandable stent and stent delivery system as defined in Claim 2, wherein said

5 expandable stent includes a distal section and one anchor member is positioned within the distal section of said expandable stent.

4. An expandable stent and stent delivery system as defined in Claim 3, wherein said

expandable stent includes a proximal section and one anchor member is positioned within the

10 proximal section of said expandable stent.

5. An expandable stent and stent delivery system as defined in Claim 2, wherein said

expandable stent includes a central section, a flared proximal section, and a flared distal section,

and wherein said flared proximal section and said flared distal section have outer diameters

15 greater than the outer diameter of the central section of said expandable stent.

6. An expandable stent and stent delivery system comprising:

a delivery system including an elongated core member having a distal portion, a proximal

cylindrical member disposed about the distal portion of said elongated core member, and a distal

20 cylindrical member disposed about the distal portion of said elongated core member and

generally positioned distally from said proximal cylindrical member and spaced apart from said

proximal cylindrical member to define a gap having a longitudinal length;

an expandable stent comprising a small diameter skeletal tubular member having a thin wall, said wall of said tubular member being cut to define a plurality of cells which are formed by a plurality of interconnected strut members, a first one of said plurality of strut members having threads cut into an edge of said first strut member, a coil formed of radiopaque material being wound onto said threads of said first strut member to thereby define an anchor member, said anchor member having a longitudinal length no greater than the longitudinal length of said gap, and said expandable stent being mounted on at least one cylindrical member and positioned such that said anchor member is disposed within said gap; and,

a deployment catheter having a lumen extending therethrough and disposed about said elongated core member such that said deployment catheter compresses said expandable stent about at least one cylindrical member causing said anchor member to be retained in said gap and thereby causing said expandable stent to be interlocked onto said elongated core member.

7. An expandable stent and stent delivery system as defined in Claim 6, wherein said first strut member includes threads cut into two opposing edges and a coil formed of radiopaque material being wound into said threads of said first strut member to thereby define a first anchor member.

8. An expandable stent and stent delivery system as defined in Claim 7, in which a second one of said plurality of strut members includes threads cut into two opposing edges of said second strut member, and a coil formed of radiopaque material is wound onto said threads of said second strut member to thereby define a second anchor member.

9. An expandable stent and stent delivery system as defined in Claim 8, wherein said expandable stent includes a distal section and one anchor member is positioned within the distal section of said expandable stent.

10. An expandable stent and stent delivery system as defined in Claim 9, wherein said expandable stent includes a proximal section and one anchor member is positioned within the proximal section of said expandable stent.

11. An expandable stent and stent delivery system as defined in Claim 8, wherein said expandable stent includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters greater than the outer diameter of the central section of said expandable stent.

12. An expandable stent comprising:

a small diameter skeletal tubular member having a thin wall;

said wall of said tubular member including a plurality of cells which are formed by a plurality of interconnected strut members, a first one of said plurality of strut members being formed with a threaded portion on said first strut member; and,

a radiopaque marker, which takes the form of a coil formed of radiopaque material being

wound onto said threaded portion of said first strut member.

13. An expandable stent as defined in Claim 12, wherein said tubular member includes a distal section and said radiopaque marker is positioned within the distal section of said tubular member.

14. An expandable stent as defined in Claim 12, wherein said tubular member includes a proximal section and said radiopaque marker is positioned within the proximal section of said tubular member.

15. An expandable stent as defined in Claim 12, in which a second one of said plurality of strut members is formed to create a threaded portion on said second strut member and said second strut member includes a radiopaque marker, which take the form of a coil formed of radiopaque material being wound onto said threaded portion of said second strut member.

16. An expandable stent as defined in Claim 15, wherein said tubular member includes a distal section and one radiopaque marker is positioned within the distal section of said tubular member.

17. An expandable stent as defined in Claim 16, wherein said tubular member includes a proximal section and one radiopaque marker is positioned within the proximal section of said tubular member.

18. An expandable stent as defined in Claim 15, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared

proximal section and said flared distal section have outer diameters greater than the outer diameter of the central section of said tubular member.

19. An expandable stent as defined in Claim 15, wherein said tubular member includes a
5 central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters between two and three times the outer diameter of the central section of said tubular member.

20. An expandable stent as defined in Claim 15, wherein said tubular member includes a
10 central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters approximately equal to three times the outer diameter of the central section of said tubular member.

21. An expandable stent as defined in Claim 12, wherein said tubular member includes a
15 central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters greater than the outer diameter of the central section of said tubular member.

22. An expandable stent as defined in Claim 12, wherein said tubular member includes a
20 central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters between two and three times the outer diameter of the central section of said tubular member.

23. An expandable stent as defined in Claim 12, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters approximately equal to three times the outer diameter of the central section of said tubular member.

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24. An expandable stent comprising:

a small diameter skeletal tubular member having a thin wall;

said wall of said tubular member including a plurality of cells which are formed by a plurality of interconnected strut members, eight of said plurality of strut members being formed with a threaded portion on each of said eight strut members; and,

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eight radiopaque markers, which take the form of a coil formed of radiopaque material being wound onto each threaded portion of said eight strut members.

25. An expandable stent as defined in Claim 24, wherein said tubular member includes a distal section and one radiopaque marker is positioned within the distal section of said tubular member.

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26. An expandable stent as defined in Claim 25, wherein said tubular member includes a proximal section and one radiopaque marker is positioned within the proximal section of said tubular member.

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27. An expandable stent comprising:

a small diameter skeletal tubular member having a thin wall;

said wall of said tubular member being cut to define a plurality of cells which are formed by a plurality of interconnected strut members, a first one of said plurality of strut members having threads cut into an edge of said first strut member; and

a coil formed of radiopaque material being wound onto said threads of said first strut member.

28. An expandable stent as defined in Claim 27, wherein said tubular member includes threads cut into two opposing edges of said first strut member and a radiopaque marker, which takes the form of a coil formed of radiopaque material being wound onto said threads of said first strut member.

29. An expandable stent as defined in Claim 28, wherein said tubular member includes a distal section and said radiopaque marker is positioned within the distal section of said tubular member.

30. An expandable stent as defined in Claim 28, wherein said tubular member includes a proximal section and said radiopaque marker is positioned within the proximal section of said tubular member.

31. An expandable stent as defined in Claim 28, wherein said tubular member includes a second one of said plurality of strut members having threads cut into two opposing edges of said second strut member and having a radiopaque marker, which take the form of a coil formed of radiopaque material being wound onto said threads of said second strut member.

32. An expandable stent as defined in Claim 31, wherein said tubular member includes a distal section and one radiopaque marker is positioned within the distal section of said tubular member.

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33. An expandable stent as defined in Claim 32, wherein said tubular member includes a proximal section and one radiopaque marker is positioned within the proximal section of said tubular member.

10 34. An expandable stent as defined in Claim 31, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters greater than the outer diameter of the central section of said tubular member.

15 35. An expandable stent as defined in Claim 31, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters between two and three times the outer diameter of the central section of said tubular member.

20 36. An expandable stent as defined in Claim 31, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters approximately equal to three times the outer diameter of the central section of said tubular member.

37. An expandable stent as defined in Claim 28, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters greater than the outer diameter of the central section of said tubular member.

38. An expandable stent as defined in Claim 28, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters between two and three times the outer diameter of the central section of said tubular member.

39. An expandable stent as defined in Claim 28, wherein said tubular member includes a central section, a flared proximal section, and a flared distal section, and wherein said flared proximal section and said flared distal section have outer diameters approximately equal to three times the outer diameter of the central section of said tubular member.

40. An expandable stent comprising:
a small diameter skeletal tubular member having a thin wall;
said wall of said tubular member being cut to define a plurality of cells which are formed by a plurality of interconnected strut members, eight of said plurality of strut members having threads cut into two opposing edges of said eight strut members; and
eight radiopaque markers, which take the form of a coil formed of radiopaque material being wound onto each of said threads of said eight strut members.

41. An expandable stent as defined in Claim 40, wherein said tubular member includes a distal section and one of said eight radiopaque markers is positioned within the distal section of said tubular member.

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42. An expandable stent as defined in Claim 41, wherein said tubular member includes a proximal section and one of said eight radiopaque markers is positioned within the proximal section of said tubular member.

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